

Leading Dutch University enhances reputation and improves student services with Cisco security technology

EXECUTIVE SUMMARY	
CUSTOMER NAME	• Saxion Universities of Applied Sciences
LOCATION	• Enschede, The Netherlands
INDUSTRY	• Education
COMPANY SIZE	• 1796 employees and 20,000 students
BUSINESS CHALLENGE	<ul style="list-style-type: none"> • Provide students with easier access to online and collaborative learning services • Little or no control over thousands of personal laptops accessing network services • Legacy computing systems unable to support more sophisticated education applications
NETWORK SOLUTION	<ul style="list-style-type: none"> • Cisco® Self-Defending Network architecture • Cisco's Network Admission Control (NAC) Appliance • Cisco Unified Wireless LAN
BUSINESS VALUE	<ul style="list-style-type: none"> • Increases reputation and brand value for high quality facilities • Increases access to applications without comprising network security • Simple and easy to give thousands of laptop users instant access to network services • Reduces time and cost for network maintenance and security

A Cisco® Self-Defending Network architecture is providing the Saxion Universities of Applied Sciences in the Netherlands with the blueprint to improve access to online services for students and reduce time and cost needed to develop and manage a secure, multi-campus wireless network.

Business Challenge

The Saxion Universities of Applied Sciences are located in the East of the Netherlands on three campuses in Apeldoorn, Deventer and Enschede. Saxion has 14 different academies offering a wide range of subjects covering sciences, the environment, finance and management to 20,000 students. Around 10 percent of students are international.

Following recent changes to a higher education status in the Netherlands, Saxion has become a private organisation operating under government regulations. This has, in part, led to an increase in competition between universities to make their institutes more attractive to potential students. As well as the quality of teaching, facilities and support services are significant factors when students choose a university. Not least of these is IT, which is becoming the main platform for delivering education-related information, learning management, collaboration and social networking.

Saxion – a merger of several institutions - is developing a reputation as a centre of excellence for applied sciences. But its legacy IT and network infrastructure could not effectively support the new organisation and neither could it support the demand for more powerful and sophisticated applications such as computer aided design and multi-media.

The strategy was to develop a single, integrated network architecture connecting up all of Saxion's locations which also includes one of the oldest libraries in the world in Deventer. The management board of Saxion had made a specific request: students coming to Saxion should have simple and open access to on-line services, but network security should never be compromised. With several thousand students hoping to use their own laptops and mobile devices to access networking services and hundreds of new students every year expecting the same kind of facility, Saxion had a huge challenge to balance open network access without increasing the risk of attack.



Network Solution

Saxion is using the Cisco ® Self-Defending Network architecture as its blueprint for developing a highly secure, yet open network infrastructure. A Cisco WAN (Wide Area Network) connects up Saxion's three main campus locations where it has deployed Cisco LANs (Local Area Networks)



supporting around 4000 network devices. As well as a fixed network, Saxion has also deployed a Cisco wireless network providing 100 percent wireless access at every Saxion location.

At the heart of Saxion's Cisco Self Defending Network strategy is Cisco's Network Admission Control (NAC) Appliance, which is integrated with the Cisco wireless network. In choosing Cisco NAC, Peter Goossens, IT service manager for Saxion, says, "We haven't seen another solution like

Cisco NAC on the market and it achieved the highest score when we evaluated various options in terms of its technical capability, fit for purpose and value for money."

When students enrol with Saxion they are given access to the University's network via their own laptop. When students first log on, a Cisco Clean Access Agent is downloaded to their laptops so that Cisco NAC can check if the necessary anti-virus software is loaded and up-to-date. If not, users are re-directed to the Web to download any required security software. Only when a mobile device has met all of Saxion's security policies and requirements, is it allowed access to the University's network. Every subsequent time the user logs onto the network, Cisco NAC checks that the required anti virus software is present and up to date.

Saxion also uses other non-Cisco security applications such as anti virus and legacy firewalls and these are being integrated into the Cisco infrastructure to provide the organisation with a unified, robust and secure IT infrastructure.

Goossens says, "Cisco does a good job at supporting many different vendor endpoint security products. By doing so, Cisco provides a much wider choice over which security tools we can use and that is a big plus for us because it means we can develop a best of breed solution."

The Cisco solution at Saxion has been implemented by KPN TELECOM B.V., a Cisco Gold Certified Partner.

Business Results

The Cisco wireless network at Saxion is one of the most advanced of its kind among universities in the Netherlands, because it covers all of Saxion's campus locations and because of its security capability. Goossens says, "Today, students are much more discerning than they were 10 years ago and having the quality and calibre of the Cisco wireless network and Cisco's network security facilities certainly makes Saxion a more attractive university for students. We know this is one factor why students choose Saxion and we know that other universities in the Netherlands are very interested in what we are doing at Saxion."

Cisco's network security technology has been instrumental in helping Saxion achieve one of the key objectives of University's directors. Students and staff have fast and easy access to online services such as email, the Internet and sharing course assignments and projects with other students and lecturers. But it has achieved that level of openness and collaboration without compromising network security and has even improved security. Goossens says, "We think that Cisco has enabled us to achieve the perfect balance."

The Cisco infrastructure, and in particular an open, yet secure environment, is key to Saxion's future plans to roll out more sophisticated services and applications that support teaching, such as e-learning, learning management systems and online collaboration facilities. Students will have instant and easy access to the applications and services they need to improve the way they learn, while being confident that they and their data are fully protected.

In addition, the Cisco technology has made network security quicker and easier to manage. Goossens estimates that Cisco has saved both money and time on maintaining network management and security. Prior to implementing Cisco NAC, Saxion was using an average of two and half people for maintenance. Now this has been reduced to one and half people, despite an increase in demand for IT services. Part of this is due to the fact that Cisco NAC and integrating it into the Cisco network infrastructure automates many network security functions such as automating the entire laptop validation process. It is helping Saxion move towards a network that can quickly adapt to security threats.

One of the benefits of the Cisco Self-Defending Network strategy, which advocates integration across all security software and devices, is security policies and protocols are the same everywhere in the network which enhances the predictability of threats and therefore the security of the network.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 6500 Series Switches
- Cisco Catalyst 3750 Series Switches

Wireless

- Cisco Catalyst 6500 Series Wireless Services Module
- Cisco Aironet 1131 Wireless Access Points
- Cisco Wireless Control System

Security and VPN

- Cisco's Network Admission Control (NAC)

"Since deploying Cisco NAC as part of our overall security strategy, viruses are no longer a significant threat to us," says Goossens. "In fact, we haven't had any viruses. The Cisco network infrastructure does detect them, but the virus is removed before it poses any threat to our systems."

Prior to the Cisco solution, when there were different network infrastructures and security systems for different locations, one of the main threats was from what Goossens describes as "creative students who would spoof" an IP address for network routers which could cause a major problem for network traffic. "It was

quite hard to identify what was happening, but with the Cisco NAC we can see, in real time, when it is happening, where it is happening and even which laptop is being used and then we can deal with the threat before it becomes a problem," says Goossens.

"Today, students are much more discerning than they were 10 years ago and having the quality and calibre of the Cisco wireless network and Cisco's network security facilities certainly makes Saxion a more attractive university for students. We know this is one factor why students choose Saxion and we know that other universities in the Netherlands are very interested in what we are doing at Saxion."

Peter Goossens, IT Service Manager, Saxion



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